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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/412,447	10/04/1999	BRADLEY CAIN	2204/144	9658

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EXAMINER
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MIRZA, ADNAN M

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 08/09/2004

22

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/412,447

Applicant(s)

CAIN ET AL.

Examiner

Adnan M Mirza

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8,10-12,14-19,21-23,25-30,32-34,37-41,44-48 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10-12,14-19,21-23,25-30,32-34,37-41,44-48 and 51-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                  |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>16/12/12/03</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3-8,10-12,14-19,21-23,25-30,32-34,37-41,44-48,51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbin (U.S. 5,881,241) and in view of Bellenger (U.S. 5,802,054).

3.

As per claim 1,12 Corbin disclosed a method of maintaining a route table in a routing device, the route table including a plurality of routes between network devices in a network, the method comprising: registering a given set of routes of the plurality of routes between network devices in a network (col. 2, lines 53-57 & col. 4, lines 28-39); wherein the given set of routes is associated with a given routing protocol (col. 6, lines 21-26), and wherein the given set of routes is a subset of the plurality of routes between the network devices in the network (col. 4, lines 48-52). Wherein the act of listing includes storing a pointer to each route in the given set of routes that has been determined to be changed in a list of changed routes for the given set of routes associated with the given routing protocol (col. 9, lines 14-21 & col. 14, lines 50-53)

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However Corbin failed to disclose determining if any of the routes in the given set of routes has changed; and listing data identifying each route in the given set of routes that has been determined to be changed.

In the same field of endeavor Bellenger disclosed determining if any of the routes in the given set of routes has changed; and listing data identifying each route in the given set of routes that has been determined to be changed (col. 7, lines 5-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated if any of the routes in the given set of routes has changed, and listing data identifying each route in the given set of routes that has been determined to be changed as taught by Bellenger in the method of Corbin to make it more fault tolerant and easy to trouble shoot.

3. As per claim 3 Corbin-Bellenger disclosed further comprising: if determined to have changed, then generating a first data value indicating that at least one of the routes in the given set of routes has changed (Bellenger, col. 10, lines 47-65).

4. As per claims 4,15 Corbin-Bellenger disclosed wherein each route in the set of routes includes an associated sequence number, the first data value being a checksum that is a function of at least one of the sequence numbers (Bellenger, col. 7, lines 1-11).

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5. As per claims 5,16 Corbin-Bellenger disclosed wherein a given route in the table includes a list data value indicating whether the given route has been listed, the given route being in the given set of routes (Corbin, col. 4, lines 35-40).
6. As per claims 6,17 Corbin-Bellenger disclosed wherein the list data value is a single bit associated with the given set of routes (Corbin, col. 4, lines 1-5).
7. As per claims 7,18 Corbin-Bellenger disclosed wherein the act of listing comprises: determining if the list data value has been set; and listing the given route if it has been determined that the list data value has not been set, the given route not being listed if it has been determined that the list data value has been set (Corbin, col. 6, lines 43-53).
8. As per claims 8,19 Corbin-Bellenger disclosed wherein the act of listing further comprises: setting the list data value (Corbin, col. 4, lines 35-40).
9. As per claims 10,21 Corbin-Bellenger disclosed accessing the list to determine each route that has changed (Corbin, col. 5, lines 36-44).
10. As per claims 11,22 Corbin-Bellenger disclosed wherein the list is accessed once during each of a selected polling interval (Corbin, col. 6, lines 45-53).
11. As per claims 14 Corbin-Bellenger disclosed a first data value generator operatively coupled with the route examiner, the first data value generator generating, if at least one

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of the routes is determined to have changed, a first data value indicating that the at least one of the routes in the given set of routes has changed (Bellenger, col. 11, lines 6-20).

12. As per claim 23 Corbin-Bellenger disclosed a computer program product for use on a computer system for maintaining a route table in a routing device, the route table including a plurality of routes between network devices in a network (Bellenger, col. 7, lines 12-23 & Corbin, col. 4, lines 28-39), the computer program product comprising a computer usable medium having computer readable program code thereon, the computer readable program code including: program code for registering a given set of routes of the plurality of routes between network devices in a network; wherein the given set of routes is associated with a given routing protocol (Corbin, col. 6, lines 21-26), and wherein the given set of routes is a subset of the plurality of routes between the network devices in the network (Corbin, col. 4, lines 48-52). Program code for determining if any of the routes in the given set of routes has changed (Bellenger, col. 11, lines 7-20); and program code for listing data identifying each route in the given set of routes that has been determined to have changed (Bellenger, col. 10, lines 50-65). Wherein the act of listing includes storing a pointer to each route in the given set of routes that has been determined to be changed in a list of changed routes for the given set of routes associated with the given routing protocol (Bellenger, col. 9, lines 14-21 & col. 14, lines 50-53)

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13. As per claim 25 Corbin-Bellenger disclosed further comprising: if determined to have changed, then generating a first data value indicating that at least one of the routes in the given set of routes has changed (Bellenger, col. 10, lines 47-65).

14. As per claim 26 Corbin-Bellenger disclosed wherein each route in the set of routes includes an associated sequence number, the first data value being a checksum that is a function of at least one of the sequence numbers (Bellenger, col. 7, lines 1-11).

15. As per claim 27 Corbin-Bellenger disclosed wherein a given route in the table includes a list data value indicating whether the given route has been listed, the given route being in the given set of routes (Corbin, col. 4, lines 35-40).

16. As per claim 28 Corbin-Bellenger disclosed wherein the list data value is a single bit associated with the given set of routes (Corbin, col. 4, lines 1-5).

17. As per claim 29 Corbin-Bellenger disclosed wherein the act of listing comprises: determining if the list data value has been set; and listing the given route if it has been determined that the list data value has not been set, the given route not being listed if it has been determined that the list data value has been set (Corbin, col. 6, lines 43-53).

18. As per claim 30 Corbin-Bellenger disclosed wherein the act of listing further comprises: setting the list data value (Corbin, col. 4, lines 35-40).

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19. As per claim 32 Corbin-Bellenger disclosed accessing the list to determine each route that has changed (Corbin, col. 5, lines 36-44).

20. As per claim 33 Corbin-Bellenger disclosed wherein the list is accessed once during each of a selected polling interval (Corbin, col. 6, lines 45-53).

21. As per claims 34,39 Corbin-Bellenger disclosed a method of determining if a given route in a route table has changed, the route being in a given set of routes of the plurality of routes between network devices in a network (Corbin, col. 4, lines 28-39), the method comprising: accessing a list of routes associated with the given set of routes of the plurality of routes between network devices in a network (Corbin, col. 4, lines 28-39); wherein the given set of routes is associated with a given routing protocol (Corbin, col. 6, lines 21-26), and wherein the given set of routes is a subset of the plurality of routes between the network devices in the network (Corbin, col. 4, lines 48-52), Wherein the act of listing includes storing a pointer to each route in the given set of routes that has been determined to be changed in a list of changed routes for the given set of routes associated with the given routing protocol (Bellenger, col. 9, lines 14-21 & col. 14, lines 50-53); and determining if data identifying the given route is listed in the list of routes (Bellenger, col. 7, lines 3-10), the given route being deemed to have changed if determined to be listed in the list of routes (Bellenger, col. 7, lines 11-24).



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22. As per claim 37 Corbin-Bellenger disclosed wherein the list of routes is accessed once during every polling period (Corbin, col. 6, lines 45-53).

23. As per claim 39 Corbin-Bellenger disclosed wherein the listed data includes a pointer to a route in the route table (Bellenger, col. 9, lines 14-21).

24. As per claim 40 Corbin-Bellenger disclosed wherein the check data value is checksum (Bellenger, col. 7, lines 1-11).

25. As per claims 41,46,48,53 Corbin-Bellenger disclosed an apparatus for determining if a given route in a route table has changed, the route being in a given set of routes of the plurality of routes between network devices in a network (Corbin, col. 4, lines 28-39), the apparatus comprising: a list accessing module that accesses a list of routes associated with the given set of routes of the plurality of routes between network devices in a network (Corbin, col. 6, lines 45-53 & col. 4, lines 28-39); wherein the given set of routes is associated with a given routing protocol (Corbin, col. 6, lines 21-26), and wherein the given set of routes is a subset of the plurality of routes between the network devices in the network (Corbin, col. 4, lines 48-52) and a route examiner operatively coupled with the list accessing module (Corbin, col. 8, lines 12-28), Wherein the act of listing includes storing a pointer to each route in the given set of routes that has been determined to be changed in a list of changed routes for the given set of routes associated with the given routing protocol (Bellenger, col. 9, lines 14-21 & col. 14, lines 50-53); and a route examiner determining if data identifying the given route is listed in the list of routes, the

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given route, being deemed to have changed if determined to be listed in the list of routes (Corbin, col. 9, lines 26-41).

26. As per claim 42,49 Corbin-Bellenger disclosed wherein the list includes data identifying at least one route in the route table.

27. As per claims 44,51 Corbin-Bellenger disclosed further comprising a poller that accesses the list once during every polling period (Corbin, col. 6, lines 45-53).

28. As per claims 45,52 Corbin-Bellenger disclosed wherein the listed data includes a pointer to a route in the route table (Bellenger, col. 9, lines 14-21).

29. As per claims 47,54 Corbin-Bellenger disclosed wherein the check data value is checksum (Bellenger, col. 7, lines 1-11).

Applicant's arguments are as follows:

30. Applicant argued that prior art did not disclose, "determining if any of the routes in the given set of routes that has been determined to be changed".

As to applicant's argument Bellenger disclosed the node route logic determine whether the received frame includes a switch route field that indicates a port in the set of ports to which the frame should be directed for transmission. If the received frame includes a switch route field, that field is updated according to source route type protocol, and the frame is forwarded with the updated switch route field out the indicated port. If the

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received frame does not include a switch route field, such would normally be the case for a frame entering the network switch at a switch node on the boarder of the network switch, then the identifying tag generated by the flow detect logic is used to access the route table memory (col. 3, lines 24-36).

31. Applicant argued that prior art did not disclose step of registering a given set of routes of a plurality of routes between network devices in a network.

As to applicant's argument Corbin disclosed more specifically, one embodiment utilizes a data route table having a list of pattern of bits, i.e. a set of registered routes (col. 4, lines 32-35). Network may interface with one or more networks. Network may interface with computer system for example exchanging data between computer systems and another computer or computers in network (col. 4, lines 22-25). One ordinary skill in the art at the time of the invention can interpret the set of registered routes as set of plurality of routes that existed between different computer systems that can be interpreted as network devices where each device has a CPU and memory that is same composition as to computer system.

32. Applicant argued that prior art did not disclose the rout table storing multiple routes between network devices in a network, that registers a set of routes of the multiple routes between network devices in a network, wherein the set of routes is associated with a routing protocol, and wherein the set of routes is a subset of the multiple routes between network devices in the network, that determines if any of the routes in the set of routes

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has changed, and that lists data identifying each route in the set of routes that has been determined to be changed.

As to applicant's argument Corbin disclosed a data route table contains a list of predetermined pattern of bits which represent a set of predetermined or registered routes (col. 2, lines 55-57). Corbin disclosed data routing mechanism has a data routing vnode with data routing vnode operations and a set of data routing modules including producer module, protocol module and file type system module (col. 4, lines 48-53). The open function updates that data routing entry. Protocol module 208's proto type route, mask, actions and ioctl lists are added to the end of the v-node's respective data route fields. The close function removes the data route from the search tree and frees the data entry (col. 6, lines 21-27).

Examiner addressed all the new limitations added to the claims.

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*Conclusion*

33. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Adnan Mirza whose telephone number is (703)-305-4633.

34. The examiner can normally be reached on Monday to Friday during normal business hours.

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703)-305-4815. The fax for this group is (703)-746-7239.

36. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)-746-7239 (For Status Inquiries, Informal or Draft Communications, please label "PROPOSED" or "DRAFT");

(703)-746-7239 (For Official Communications Intended for entry, please mark "EXPEDITED PROCEDURE"), 703)-746-7238 (For After Final Communications).

37. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

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Any response to a final action should be mailed to:

BOX AF

Commissioner of Patents and Trademarks Washington, D.C.20231

Or faxed to:

Hand-delivered responses should be brought to 4<sup>th</sup> Floor Receptionist, Crystal

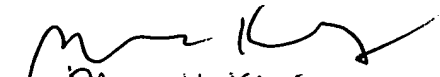
Park II,

2021 Crystal Drive, Arlington, VA 22202.

AM

Adnan Mirza

Examiner

  
PAUL H. KANG  
Primary Examiner